REMARKS

The present application was filed on July 30, 1999 with claims 1-38. Claims 1-38 remain pending in the application. Claims 1, 15, 29, 31, 33-35 and 37 are the independent claims.

In the Office Action, the Examiner objected to the drawings, rejected claims 1-4, 7-18 and 21-38 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,751,806 (hereinafter "Ryan") in view of U.S. Patent No. 5,818,934 (hereinafter "Cuccia") and page 20 of "Handbook of Applied Cryptography" by A.J. Menezes et al. (hereinafter "Menezes"), and indicated that claims 5, 6, 19 and 20 would be allowable if rewritten in independent form.

In this response, Applicant amends the specification and drawings to correct minor errors of a typographical nature, amends independent claims 1, 15, 29, 31, 33-35 and 37, amends dependent claims 12 and 26, and traverses the §103(a) rejection. Applicant respectfully requests reconsideration of the application in view of the remarks below.

With regard to the objection to the drawings, Applicant submits herewith formal drawings which are believed to overcome the objection. More specifically, FIG. 4 of the formal drawings uses the reference numeral 256 rather than the reference numeral 252 to denote the channel stream processor. Corresponding amendments have been made to the specification. The formal drawings should therefore be accepted, and the objection withdrawn.

With regard to the §103(a) rejection, Applicant initially notes that a proper *prima facie* case of obviousness requires that the cited references when combined must "teach or suggest all the claim limitations," and that there be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references or to modify the reference teachings. See Manual of Patent Examining Procedure (MPEP), Eighth Edition, August 2001, §706.02(j).

Applicant submits that the Examiner has failed to establish a proper *prima facie* case of obviousness in the present §103(a) rejection, in that the Ryan, Cuccia and Menezes references, even if assumed to be combinable, fail to teach or suggest all the limitations of independent claims 1, 15, 29, 31, 33-35 and 37, and in that no cogent motivation has been identified for combining the references or for modifying the reference teachings to reach the claimed invention. Furthermore,

even if it is assumed that a *prima facie* case has been established, there are teachings in one or more of the references that controvert the obviousness arguments of the Examiner.

The present invention as set forth in independent claims 1, 15, 29, 31, 33-35 and 37 is directed to arrangements in which information is delivered in a partially-encrypted format using multiple bitstreams. For example, with reference to claims 33 and 34, the information may be delivered to a receiver using first and second bitstreams, with the first bitstream being encrypted and the second bitstream being unencrypted. This exemplary partially-encrypted format allows access to the information to be provided at a first quality level without decrypting the second bitstream. If the second bitstream is decrypted, access to the information may be provided at a second quality level higher than the first.

The Examiner acknowledges that Ryan fails to teach or suggest such arrangements, but that the combined teachings of Ryan, Cuccia and Menezes meet the limitations in question. Applicant respectfully disagrees. The collective teachings of these references simply fail to suggest any of the claimed arrangements. For example, with reference to claims 33 and 34, the collective teachings fail to suggest that information may be delivered to a receiver using first and second bitstreams, with the first bitstream being encrypted and the second bitstream being unencrypted, so as to provide access to the information at different quality levels based on whether or not the second bitstream is decrypted. The collective teachings of the cited references are similarly deficient with regard to the other independent claims.

With regard to motivation, the proposed combination of Ryan, Cuccia and Menezes appears to be based on a piecemeal reconstruction of the claimed invention, with the benefit of hindsight, rather than on any objective evidence in the references themselves.

The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination "must be based on objective evidence of record" and that "this precedent has been reinforced in myriad decisions, and cannot be dispensed with." In re Sang-Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that "conclusory statements" by an examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved "on subjective belief and unknown authority." Id. at 1343-1344. There has been no showing in the present §103(a) rejection of objective

evidence of record that would motivate one skilled in the art to combine Ryan, Cuccia and Menezes, or to modify their teachings to reach the particular limitations in question. The statements of obviousness given by the Examiner in the Office Action are precisely the type of subjective, conclusory statements that the Federal circuit has indicated provide insufficient support for an obviousness rejection.

As noted above, even if it is assumed that a proper *prima facie* case has been established, there are particular teachings in one or more of the references which controvert the obviousness argument put forth by the Examiner. For example, the Cuccia reference apparently teaches to perform the same encryption operations on any given bitstream, which is a direct teaching away from the invention as set forth in, for example, claims 33 and 34.

Independent claims 1, 15, 29, 31, 33-35 and 37 are therefore believed to be allowable over the proposed combination of Ryan, Cuccia and Menezes. The §103(a) rejection is believed to be improper, and should be withdrawn.

Notwithstanding the foregoing traversal, Applicant has amended claims 1, 15, 29, 31, 33-35 and 37. These amendment are made solely to expedite the prosecution of the application, and not for any reason relating to patentability. As indicated above, the claims as originally filed are believed to be clearly allowable over Ryan, Cuccia and Menezes.

In view of the above, Applicant believes that claims 1-38 are in condition for allowance, and respectfully requests withdrawal of the §103(a) rejection.

A marked-up version of the changes made by the present Amendment is attached hereto.

Respectfully submitted,

Date: July 24, 2003

Joseph B. Ryan
Attorney for Applicant(s)
Reg. No. 37,922
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560
(516) 759-7517

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

The paragraph beginning at page 5, line 6, has been amended as follows:

More particularly, in this four-stream implementation, bitstream 105-1 associated with subband B of sideband 102 is decoded in Viterbi decoder 112 and CRC decoder 132, bitstream 105-2 associated with subband A of sideband 102 is decoded in Viterbi decoder 114 and CRC decoder 134, bitstream 105-3 associated with subband B of sideband 104 is decoded in Viterbi decoder 122 and CRC decoder 142, and bitstream 105-4 associated with subband A of sideband 104 is decoded in Viterbi decoder 124 and CRC decoder 144. The outputs of the CRC decoders 132, 134, 142 and 144 are applied to a [PAC] perceptual audio coder (PAC) decoder 150, which generates reconstructed audio output signals for application to speakers 152, 154. It should be noted that the exemplary systems illustrated in FIG. 1 may be configured to introduce delay between the various multiple bit streams, in order to provide additional time diversity.

The paragraph beginning at page 8, line 19, has been amended as follows:

FIG. 4 shows a portion of a transmitter 250 which represents an alternative implementation of the transmitter 200 of FIG. 3. The transmitter 250 includes an audio processor 252, a channel stream processor [252,] 256, and a set of hardware 254 which implements the IF interface 206 and the global timing process 230. In the audio processor 252, an analog audio source is applied to A/D converter 212, and multiplexed with a digital audio source in a multiplexer 259. An output of the multiplexer 259 is applied to the above-described multi-stream PAC encoder 215, and the multi-stream output of the PAC encoder 215 is partially encrypted in the encryption device 210 in the manner previously described. The encryption device 210 in this embodiment is assumed to be part of the audio processor 252. The output of the encryption device is applied to an ancillary data combiner 262, and combined with data from an ancillary data source, if any. Different delays may

be applied to one or more of the multiple bitstreams in a staggered stream delay (SSD) element 264, in order to provide the above-noted time diversity between the bitstreams.

The paragraph beginning at page 9, line 3, has been amended as follows:

The channel stream processor [252,] 256, which may be implemented in whole or in part in software, includes an auxiliary data combiner 266 which receives the multiple bitstreams from the SSD element 264. The auxiliary data combiner 266 combines the multiple streams with auxiliary data from an auxiliary data source and service data 272, as delivered from a data multiplexer 274 and data encoder 276. Data encoder 276 may be, e.g., a Reed-Solomon (RS) encoder. An interface control element 270 interacts with the global timing process 230 to handle the transfer of control and monitor information between the channel stream processor [252] 256 and, e.g., other portions of the transmitter or other system devices.

The paragraph beginning at page 10, line 16, has been amended as follows:

One or more of the service processes 310, as well as other elements of the receiver 300, may be implemented at least in part using a digital signal processor, an ASIC, an FPGA, as well as portions or combinations of these and other types of processors. For example, the decryption device 325, the PAC audio decoder 326, the data decoder 327, and an interface to the recording device 328, may be implemented at least in part using a DSP, while the SEP 318, OFDM/DQPSK demodulator 320, error correction layers 322, and PH 335, may be implemented in a combination of an ASIC and an FPGA. More particularly, implementing the decryption device 325 and recording device interface as DSP code in a read-only memory (ROM) of a DSP ensures that these elements will be less susceptible to unauthorized access after manufacture.

The paragraph beginning at page 14, line 16, has been amended as follows:

FIG. 7 illustrates examples of the manner in which a given recorded audio selection may be played back. A given recorded encrypted selection 420 may be played back for a designated period of time, e.g., 30 days, at a reduced quality level prior to purchase. This allows the user ample time to decide whether to purchase the recorded audio selection or to discard it. The recorded encrypted selection may be read in operation 424, which discards the encrypted streams and checks the corresponding expiration date. The selection is then applied to a single-stream PAC decoder 430 for playback through an audio output system 430 at, e.g., an FM-quality level.

IN THE CLAIMS

1. (Amended) A method of delivering information, the method comprising the step of:

delivering at least a portion of the information to a receiver in an at least partially-encrypted format using multiple bitstreams of a digital communication system, such that access to the information is provided at a first quality level;

wherein the multiple bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system; and

wherein upon decryption of the at least partially-encrypted format, access to the information is provided at another quality level.

12. (Amended) The method of claim 11 wherein the storage device comprises at least one of a disk, a memory card and a [cartridge] cartridge.

15. (Amended) An apparatus for delivering information, comprising:

a transmitter operative to [a] transmit at least a portion of the information to a receiver in an at least partially-encrypted format using multiple bitstreams of a digital communication system, such that access to the information is provided at a first quality level;

wherein the multiple bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system; and

wherein upon decryption of the at least partially-encrypted format, access to the information is provided at another quality level.

26. (Amended) The apparatus of claim 25 wherein the storage device comprises at least one of a disk, a memory card and a [cartridge] cartridge.

29. (Amended) A method of receiving information, the method comprising the steps of:

receiving at least a portion of the information from a transmitter in an at least partially-encrypted format using multiple bitstreams of a digital communication system, such that access to the information is provided at a first quality level;

wherein the multiple bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system; and

wherein upon decryption of the at least partially-encrypted format, access to the information is provided at another quality level.

31. (Amended) An apparatus for receiving information, comprising:

a receiver operative to receive at least a portion of the information from a transmitter in an at least partially-encrypted format using multiple bitstreams of a digital communication system, such that access to the information is provided at a first quality level;

wherein the multiple bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system; and

wherein upon decryption of the at least partially-encrypted format, access to the information is provided at another quality level.

33. (Amended) A method of delivering information, the method comprising the step of:

delivering at least a portion of the information to a receiver, using at least first and second bitstreams of a digital communication system, wherein the first bitstream is encrypted and the second bitstream is unencrypted, such that access to the information is provided at a first quality level;

wherein the first and second bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system; and

wherein upon decryption of the first bitstream, access to the information is provided at another quality level.

34. (Amended) An apparatus for delivering information, comprising:

a transmitter operative to [a] transmit at least a portion of the information to a receiver, using at least first and second bitstreams of a digital communication system, wherein the first bitstream is encrypted and the second bitstream is unencrypted, such that access to the information is provided at a first quality level;

wherein the first and second bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system; and

wherein upon decryption of the first bitstream, access to the information is provided at another quality level.

35. (Amended) A method of delivering information, the method comprising the steps of:

delivering at least a portion of the information to a receiver in an at least partially-encrypted format using multiple bitstreams of a digital communication system, such that access to the information is provided at a first quality level without decrypting the information in the at least partially-encrypted format; and

providing via an electronic commerce system a key for decrypting the information in the at least partially-encrypted format, such that when the information is decrypted, access to the information is provided at a second quality level higher than the first quality level;

wherein the multiple bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system.

37. (Amended) An apparatus for delivering information, comprising:

a transmitter operative to [a] transmit at least a portion of the information to a receiver in an at least partially-encrypted format using multiple bitstreams of a digital communication system, such that access to the information is provided at a first quality level without decrypting the information in the at least partially-encrypted format, and wherein a key for decrypting the

information in the at least partially-encrypted format is provided via an electronic commerce system, such that when the information is decrypted, access to the information is provided at a second quality level higher than the first quality level;

wherein the multiple bitstreams are transmitted in subbands of one or more digital sidebands of a carrier signal in the system.